

We claim:

1. A hydraulic brake booster for use in a brake system having a housing with a first bore for retaining a power piston, a second bore for retaining a control valve and an actuation chamber, said second bore being
5 connected to a source of pressurized fluid, a reservoir and said actuation chamber, said control valve including a first cylindrical member and a second cylindrical member retained in said second bore, said first and second cylindrical member having a stepped bore that extends there through and a first sleeve located in said stepped bore to control communication between an
10 inlet port, a supply port and a relief port in said housing, an actuator arrangement including a ball located in said stepped bore and a pin retained in said second cylindrical member, said pin having a first end being located in said actuation chamber and connected with a first input member and a second end that extends into said stepped bore to engage said ball, said first
15 end on receipt of a first input force initially moving said pin and ball from a position of rest to interrupt fluid communication between said actuation chamber and said reservoir through said relief port and thereafter moving said first sleeve to selectively initiate communication of pressurized fluid presented to said inlet port to said actuation chamber that acts on said first piston as a
20 function of said first input force to effect a first brake application of a wheel brake, said pin and ball returning to said position of rest on termination of said first input force, said actuator arrangement being further characterized by a second sleeve that surrounds said pin with a lip on a first end that engages said second cylindrical member to position a second end thereof in an
25 auxiliary actuation chamber in said second cylindrical member, said second sleeve responding to a second input force derived from pressurized fluid being presented to said auxiliary actuation chamber as a function of a second input and acting on said second end of said second sleeve to move said first end into engagement with said ball and move said ball from a position of rest
30 to interrupt fluid communication between said actuation chamber and said reservoir through said relief port and thereafter moving said first sleeve to selectively initiate communication of pressurized fluid presented to said inlet port to said actuation chamber that acts on said first piston as a function of

said second input to independently effect a second brake application of a wheel brake, said ball returning to said position of rest and said second sleeve returning to engagement with said second cylindrical member on termination of said second input force.

5 2. The hydraulic brake booster as recited in claim 1 wherein said actuator arrangement is further characterized by a first solenoid valve through which said auxiliary actuation chamber is connected to said reservoir and a second solenoid valve through which said auxiliary actuation chamber is connected to said source of pressurized fluid, said second input force being
10 derived by activating said first solenoid to interrupt communication to said reservoir and activating said second solenoid to initiate communication of pressurized fluid to said auxiliary actuation chamber.

 3. The hydraulic brake booster as recited in claim 2 wherein said actuator arrangement further includes a restricted flow path through which
15 said second solenoid valve is connected to said actuation chamber, said pressurized fluid being simultaneously communicated to said auxiliary actuation chamber and said actuation chamber to initiate said second brake application of a wheel brake on activation of said second solenoid valve.

 4. The hydraulic brake booster as recited in claim 3 wherein said first
20 solenoid valve is modulated to change the level of said pressurized fluid supplied to said auxiliary chamber and correspondingly the intensity of said second brake application.

 5. The hydraulic brake booster as recited in claim 4 wherein said restricted flow path includes a one way flow valve to prevent flow
25 communication from said actuation chamber to said auxiliary chamber.

 6. The hydraulic brake booster as recited in claim 5 wherein said pin remains stationary during movement of said second sleeve such that said first input member also remains in a stationary rest positions.

 7. The hydraulic brake booster as recited in claim 4 wherein said first
30 valve is modulated as a function of input signals supplied to an ECU that are derived from sensors that detect the functional conditions of the brake system and corresponding environment.